

The Saturday Gazette.

BLOOMFIELD AND MONTCLAIR.

WILLIAM P. LYON, Editor and Proprietor. OFFICE, CHAS. M. DAVIS, Associate Editor. Bloomfield, N. J.

AN INDEPENDENT WEEKLY JOURNAL OF LITERATURE, EDUCATION, GENERAL NEWS AND LOCAL INTERESTS. \$2.00 A YEAR—IN ADVANCE

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THE SATURDAY GAZETTE, BLOOMFIELD AND MONTCLAIR.

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EDUCATION, POLITICS, GENERAL NEWS, and LOCAL INTERESTS.

It is generally acknowledged to be the equal of the best newspapers published and superior to most country papers. It is a matter of pride to those towns which it so ably and well represents. To sustain these assertions, it would be easy to give a large selection from opinions of its readers and patrons which constantly come to hand. But the paper will speak for itself.

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Mar. 1-ly

CITIZENS' Insurance Company.

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PAID UP CAPITAL, \$300,000. ASSETS, OVER \$300,000.

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July 26-ly

PEOPLES Savings Institution,

443 BROAD STREET, NEWARK, N. J.

At a meeting of the Board of Managers held this day, a dividend at the rate of 7 PER CENT PER ANNUM FREE OF ALL TAXES

was declared on all deposits entitled thereto on the first of May, payable on and after May 15th.

Interest not drawn will be credited as principal from May 1st. Deposits made on or before May 24, will draw interest from May 1st.

This institution will remove on or about April 25th to its new Banking room, number 443 Broad St., under the Continental Hotel.

H. M. RHODES, President. Wm. N. RANDALL, Treasurer.

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OUR ROADS.

[NOTE.—A meeting of the voters of Road Improvement District, No. 1, in the township of Montclair, was held on the evening of February 24, 1874, to consider an application that had been made for the improvement of certain roads and streets in said township, by the use of gravel.]

After listening to the statements that were made, it appeared, to the voters present, that before authorizing the large expenditure that would be required to complete the work, it would be proper to obtain fuller information as to the comparative merits of different methods of road-making; and, after voting down the petition that was before them, they appointed a Committee to examine into the subject, and to report the facts and information which they might obtain to a subsequent meeting which they were authorized to call.

This Committee, after completing their investigations, called a meeting, which was held on Friday evening, May 6th, 1874, at which they made the following interesting and valuable report.—PUB.]

REPORT OF COMMITTEE ON ROAD IMPROVEMENTS, MONTCLAIR.

The Committee, appointed for the purpose of examining as to the merits of different plans for the improvement of roads, endeavored to obtain the best and most trustworthy information, bearing upon the subject, by visiting and inspecting roads constructed according to the most approved methods, by personal interviews with those who by practical experience or by their official position and connection with the construction and maintenance of roads, were most competent to give the desired information, and also by a careful examination of such books and reports relating to the subject, as they were able to consult.

It is not considered necessary to refer particularly to the disadvantages of the present roads, for they are a subject of general complaint.

No one can use them without being keenly alive to their defects, and to the discomfort and inconvenience that would come from their being kept uniformly hard and smooth at all times.

It is believed that on this point there is no difference of opinion, and that the only question for consideration is as to the best method for making roads that shall be thoroughly good at all seasons of the year, and in all kinds of weather.

FOUNDATION.

In noticing the points which distinguish good roads, the first in the order of their construction, and one of the most important in its effects upon the subsequent stages of the work, is that a road which is at all times hard and smooth, is invariably built upon a dry and solid foundation.

To this rule there are no exceptions, and, in the nature of things, there cannot be. It matters not how good the surface materials may be, nor with what skill they may be used; it is the subsoil on which the roadway rests, that must sustain the weight, not only of the travel which is to pass over it, but also that of the roadway itself; and it is, therefore, apparent that a road cannot be kept uniformly hard and sure supported.

If the foundation be spongy or yielding, the roadway will have a constant tendency to sink by its own weight; the passage of loaded vehicles will cut it up into ruts, and the motion of one part against another, whenever the road is used, will gradually reduce the surface to a mass of loose materials.

It is for this reason that a good foundation is a matter of primary importance, and that the success of all subsequent work depends largely upon it. For this purpose there can be nothing better than a bed of dry, solid earth, secure or protected against the approach of water, and the first efforts of road-builders are directed towards finding a natural road-bed of that character, or forming one by artificial means.

If the natural soil supplies all that is necessary in that respect, there is little to do but to shape it, preparatory to putting upon it the covering materials which may have been selected. But, if to any degree it is spongy, or retentive of moisture, or so situated that it is liable to receive the wash of adjoining lands, it is essential that provision should be made to carry off the water; for, unless this be done, the best results cannot be secured.

DRAINAGE.

So important is this considered by practical road-builders, that there is nothing which they insist upon with greater persistency than upon drainage, as an essential part of the necessary preparation for building a thoroughly good road.

A writer in the "Agricultural Report" for 1866, says:

"The point in which more than in any other, highways are defective in this country, is in being wet at the foundation, and the first thing to be attended to in their construction, is thorough drainage."

Another writer, Mr. Herschel, civil engineer of Boston, says:

"With a perfect sub-drainage, the winter frost, having no water to act upon within the body of the road, is robbed of its great power to destroy the same, and it also prevents the surface from becoming soaked, and thence destroyed in the summer."

Macadam, the originator of "macadamized" roads, wrote:

"It is the nature of the soil which supports the weight of the traffic; that, while it is prepared in a dry state, it will carry any weight without sinking; that this native soil must be previously made quite dry, and a covering impenetrable to rain must then be placed over it to preserve it in that dry state."

Mr. Penfield, another authority, writes:

"No attempt at repairs must be made until great care has been bestowed on drainage, a point so desirable in road making, that any exertion in other respects will be fruitless, when this is attended to."

In fact, the evils attending a wet foundation are so well known, that there are no differences of opinion, or of practice con-

cerning them. Unless the wet places are properly drained, the action of frost heaves and breaks up the road-way, rendering it nearly impassable in Spring, while the common expedient of applying more materials to the surface, and rounding it up, only makes the mud deeper.

It may be thought that so much care for drainage is unnecessary; but when it is remembered that the effect of too much moisture is to soften and loosen the soil, it will be perceived that to this cause the bad character of our roads is mainly attributable.

In the dry weather of summer, all but the immediate surface of the road is hard and solid, and if it can be kept in that condition, by drainage from below, and a waterproof covering from above, which will receive all the wear, there is nothing to prevent the road bed from lasting forever, as it is the only covering that will need to be renewed.

COVERING, OR SURFACE, OF ROADS.

Next we have to consider the artificial covering, or surface, of the road.

Of the many forms of pavement, or road improvement, which have been tried, those which properly come within the limits of the present inquiry are gravel roads, and those made, in one way or another, of broken stones.

Other goods have been made, and are extensively used, but they are not so well adapted to country roads, and the heavy expense attending them forbids their use, except in large towns and cities.

For, it will be remembered, that no one kind of road can be the best for all places. Each place, in deciding to construct those of any kind or of another, must be governed by the character of the soil on which it is to be made, the nature and extent of the travel expected, the kind and quality of the materials that can be most readily obtained, and the ability of the people to bear the expense.

There is one quality that the road surface should possess, which has already been mentioned incidentally, but which is desirable to repeat in this connection, as it must be borne in mind, while considering the different forms of surface construction.

It is that surface drainage should be provided for, by making the covering, as nearly as possible, impervious to the water that may fall upon it, and also, that provision should be made to carry off the small quantity of water which, in spite of the best directed efforts, will make its way into and through the road covering.

This is important for the same reason that sub-drainage is necessary—because of the softening effect of water upon the road-bed.

Recapitulating, now, the points which have been mentioned, a well constructed road should have a foundation of earth, made dry and solid by proper and sufficient drainage; and it should have a covering as nearly as possible impervious to water, with a surface hard, smooth and elastic.

It is by this standard that the comparative merits of the different methods of road-construction are to be judged.

Limiting our inquiries to those in which the materials used are either gravel or broken stones, we find them divided, by the peculiarities of their construction, into two classes.

First. Those having no artificial foundation, in which the covering materials are laid directly upon the ground.

Second. Those having a paved foundation.

The first class includes gravel and "macadamized" roads, and the second those known as "Telford" roads, in which a rough pavement is first laid on the surface of the prepared ground, and afterwards covered by the road materials.

In the comparisons to be made between them, it is to be understood that the necessity for a thorough preparation of the soil on which they are to be laid, by drainage or otherwise, in order to obtain a sure foundation, is common to all of these roads.

In other respects, there are wide differences between them, which need to be noticed in detail.

Of those mentioned as having no artificial foundation, the first in the order of cheapness of construction are

GRAVEL ROADS.

These take their name from the fact that gravel forms the larger part of the material used in making them; but it may be noted, that they are not made of pure gravel, but of a mixture of gravel and pebbles, of which gravel is largely composed, are mixed with other materials, their rounded surfaces cause to turn and twist under every pressure of the wheels, so that the top of the road cannot become firm and solid.

To overcome this difficulty, it is usual to add to the gravel a proper proportion of earth, mixing them well together, and then thoroughly incorporating them by heavy rolling. By this means, if the material added is of a proper quality, it serves to bind and keep the gravel in place, and the combination is said to make a road much better than ordinary country roads, made entirely of earth; but with all the care that can be exercised, they fall short of meeting the requirements of constant and heavy use.

Their most obvious defect is that the surface is not sufficiently waterproof.

In wet weather the binding material becomes so softened by water, that the surface yields to the pressure coming upon it; ruts are formed, and become filled with water, which having no other means of escape, soaks into the road and renders it more liable to injury; and when the rains are followed by freezing weather, the surface is in danger of being broken up and its smoothness destroyed.

Another objection is, that even under the most favorable circumstances, they lack the solidity needed to enable them to stand the wear of heavy traffic.

They are pleasant to ride upon, but constant patching is necessary to keep them in order, for the reason that any unevenness of surface is sure to be increased rapidly by wear.

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